REMARKS

Responsive to the Office Action dated May 19, 2004, reconsideration of the rejection of claims is respectively requested in light of the following authorities and remarks.

3,4. Claims 2-9,11-18, 21-and 22 stand rejected under 35 U. S. C. Section 103(a) as being unpatentable over Ferren.

Regarding claim 2, the reference is said to disclose a loudspeaker system comprising a first loudspeaker array comprising an enclosure having a width and a height and at least six acoustic drivers having radiating surfaces, the reference is said to disclose an embodiment with more than six speakers with specific reference to FIG.2, column 5, lines 35-37, wherein drivers are positioned in the enclosure in a first substantially straight line, substantially regularly spaced so that the edges of radiating surfaces are less than two inches apart, the reference is said to disclose separation being less than 1/2 inch, with specific reference to column 5, lines 37-39, and the array is said to be constructed and arranged to radiate sound in a predetermined frequency range, the reference is said to disclose the full frequency range coupled, with the specific reference to column 2, lines 10-13. The reference does not disclose the drivers having a diameter less than three inches or a predetermined frequency range of at least six octaves.

It is said to be well known in the art that the frequency response of the human ear is approximately 20 Hz to 20 KHz, which is approximately 10 octaves. To produce the highest quality audio response to the ear, it is said that one skilled in the art would have known that the transducers should produce a frequency range output encompassing the greatest range between 20 Hz to 20 KHz possible. Therefore, it is said it would be obvious to one of ordinary skill in the art at the time the invention was made that a loudspeaker array would have a frequency range of at least six octaves in order to produce a high quality perceived sound for the listener.

Although the reference does not disclose the drivers having a diameter less than three inches, it is said to be well known in the art that the drivers come in a wide range of sizes. It is said it would have been obvious to one of ordinary skill in the art at the time the invention was made to use drivers of less than three inches as a matter of design choice based on the availability of the drivers or mounting space available in the loudspeaker system.

Regarding claim 8, the reference is said to further disclose an electrical circuit which provides essentially the same audio signal to all of the acoustical drivers at all frequencies, with

specific reference to a circuit in FIG. 11 which is said to disclose substantially the same audio signal to all of the drivers 26.

Regarding claim 9, the reference is said to further disclose the diameter (i.e. width) of the speaker enclosure is six inches, with specific reference to column four, lines 6-7, and that the speakers can be disposed within a height eight feet (col. 4, lines 15-18) producing a height to width ratio of 8 feet/6 inches= 16 which is greater than 11.

Regarding claim 21, the reference is said to further disclose a plurality of first loudspeaker arrays in a room, the reference is said to disclose an auditorium with specific reference to column 1, lines 13, having a performance area contiguous with a listening area, with specific reference to FIG.1, the plurality of loudspeaker arrays 10, 12, 14 and 16 located at a corresponding plurality of spaced locations in the performance each facing the listening area 18 with the associated straight line substantially vertically orientated, and a corresponding plurality of electrical acoustical transducers the reference is said to disclose announcer's microphone, column 1, line 55, located in the performance area at a corresponding plurality of spaced locations electrically coupled to respective ones of the loudspeaker arrays and located between the associated loudspeaker array and the listening area, the reference is said to disclose announcer in the vicinity of the loudspeakers; that is between the loudspeaker array and listening area with specific reference to column 1, lines 51-55. Regarding claim 22, the reference is said to further disclose a room having a performance area (FIG. 1) contiguous with a listening area 18 and a plurality of loudspeakers, arrays 10, 12, 14 and 16, with corresponding electrical acoustical transducers including, placing the plurality of loudspeaker arrays at a corresponding plurality of spaced locations in the performance area with each facing the listening area 18 with the associated straight lines substantially vertically oriented, placing the plurality of the electro-acoustical transducers in the performance area at a corresponding plurality of space locations between an associated loudspeaker array and a listening area, and electrically coupling each of the electro-acoustical transducers to associated loudspeaker array, the reference is said to disclose announcer with microphone in the vicinity of loudspeaker; that is, between loudspeaker and listening area, with specific reference to column 1, lines 51-55, which is said to output sound from the microphone.

Regarding claim 3, the reference is said to disclose a loudspeaker system comprising a first loudspeaker array comprising an enclosure having a width and height and at least six acoustic drivers having radiating surfaces, the reference is said to disclose an embodiment with more than six speakers, with specific reference to FIG. 2, column 5, lines 35-37, wherein drivers are positioned in the enclosure in a first substantially straight line, substantially regularly spaced so that the edges of radiating surfaces are less than two inches apart, the reference is said to disclose separation equal 1/2 inch, with specific reference to column 5 lines 37-39 and array is said to be constructed and arranged to radiate sound in a predetermined frequency range, the reference is said to disclose the full frequency range being coupled, with specific reference to column 2, lines 10-13, a second loudspeaker array having an enclosure and a plurality of acoustic drivers having radiating surfaces, with specific reference to FIG. 7 array 80N, each of the drivers having an enclosure and a plurality of acoustic drivers having radiating surfaces, it is said to be inherent acoustic drivers will have radiating surfaces, the drivers positioned in the enclosure in a second substantially straight line, the reference is said to disclose an embodiment with more than six speakers, with specific reference to FIG. 2, column 5, lines 35-37, regularly spaced less that one inch apart, the reference is said to disclose the separation equals 1/2 inch, with specific reference to column 5, lines 37-39, wherein the second loudspeaker array is constructed and arranged to be detachably secured to the first array in a manner that extends the first substantially straight line so that the height of the loudspeaker is increased and so that the width of the loudspeaker system remains constant, the reference is said to disclose arrays are secured together by conventional means, said to be detachably secured, e.g., nuts and bolts, with specific reference to pages 7 and 9. The reference does not disclose the drivers having a diameter less than three inches. It is said it would have been obvious to one of ordinary skill in the art at the time the invention was made to use drivers of less than three inches as a matter of design choice based on the availability of the drivers or mounting space of the loudspeaker system.

Regarding claim 4, the reference is said to further disclose a loudspeaker system comprising plurality of arrays (FIG. 7) with a diameter of six inches (col. 4, lines 6-7). The reference is said to further disclose each array as about 12 feet high (col. 4, lines 63-63) which is said to produce a height to width ratio of 24, which is greater than 20.

Regarding claim 5, the reference is said to further disclose an attachment device (nuts and bolts: col. 6, lines 25-28) for attaching the first loudspeaker array to the second loudspeaker array.

Regarding claim 6, the reference is said to further disclose an electrical circuit which provides essentially the same audio signal to all of the acoustical drivers at all frequencies (FIG. 11 is said to disclose substantially the same audio signal to all of the drivers 26).

Regarding claim 7, the reference is said to further disclose the individual arrays may be secured together by fastener means, i.e., may be removed and portable (col. 6, lines 24-28).

Regarding claim 11, the reference is said to disclose a first portable array module comprising a portable enclosure and at least six acoustic drivers positioned in a substantially straight line, the reference is said to disclose an embodiment with more than six speakers (FIG. 2; col. 5, lines 35-37); a second portable array comprising a second portable enclosure and a plurality of acoustic drivers positioned in a substantially straight line; and an attachment system for attaching the first portable array to the second portable array in a manner so as to extend the substantially straight line, the reference is said to disclose individual linear arrays 80A, 80B', 80N and FIG. 7 where arrays may be secured together by conventional fastener means (col. 6, lines 21-28).

Regarding claim 12, the reference is said to disclose a loudspeaker array module (FIG. 2), comprising a portable enclosure having an attachment system for attaching the module to a second like module (FIG. 7; col. 6, lines 21-28); and at least six acoustic drivers (FIG. 2; col. 5, lines 35-37), each of the acoustic drivers having radiating surface, at least six drivers positioned in the enclosure in a substantially straight line (FIG. 2), regularly spaced so that the edges of the radiating surfaces are less than one inch apart (col. 5, lines 37-39); whereby when the module is attached to the second like module all the drivers are positioned in a substantially straight line (FIG. 7). The reference does not disclose the drivers having a diameter less than three inches or a predetermined frequency range of at least six octaves.

It is said to be well known in the art that the frequency response of the human ear is approximately 20 Hz to 20 kHz which is approximately ten octaves. To produce the highest quality audio response to the ear, it is said that one skilled in the art would have known that the transducer should produce a frequency range output encompassing the greatest range between 20

Hz to 20 kHz possible. Therefore, it is said it would have been obvious to one of ordinary skill in the art at the time the invention was made that a loudspeaker array would have a frequency range of at least six octaves in order to produce a high quality perceived sound for the listener.

Although the reference does not disclose a drivers having a diameter less than three inches, it is said to be well known in the art that drivers come in a wide range of sizes. It is said that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use drivers of less than three inches as a matter of design choice based on the availability of the drivers or mounting space available at the loudspeaker system.

Regarding claim 13, the reference is said to disclose a method for improving the number of electrical watts transduced per unit radiating area of aligned array loudspeaker comprising mounting in a substantially straight line a plurality of acoustic drivers having a radiating surface having an edge (FIG. 2); and placing the acoustic drivers in the line so that the edges of radiating surfaces adjacent acoustic drivers are separated by no greater than one inch (col. 5, lines 37-39). The reference does not disclose the drivers having a diameter less than three inches or a predetermined frequency range of at least six octaves. It is said it would have been obvious to one of ordinary skill in the art at the time the invention was made that a loudspeaker array would have a frequency range of at least six octaves in order to produce a high quality perceived sound for the listener. It is also said that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use drivers of less than three inches as a matter of design choice based on the availability of the drivers or mounting space available of the loudspeaker system.

Regarding claim 14, the reference is said to disclose a loudspeaker system for a live source of sound comprising (FIG. 1 is said to disclose use as a public address system); a line array loudspeaker comprising a line array plurality of acoustic drivers (FIG. 2), each of the acoustic drivers positioned in an enclosure in a straight line regularly spaced less than one inch apart (col. 5, lines 32-52), the line array being constructed and arranged to be placed in the near vicinity of the live source of sound facing an audience (the reference is said to disclose announcer in vicinity of loudspeakers used in public address system such as in FIG. 1 (col. 1, line 53-54)). The reference does not disclose the drivers having a diameter less than three inches or a predetermined frequency range of at least six octaves. It is said it would have been obvious

to one of ordinary skill in the art at the time the invention was made that a loudspeaker array would have a frequency range of at least six octaves in order to produce a high quality of perceived sound for the listener. It is said it would have been obvious to one of ordinary skill in the art at the time the invention was made to use drivers of less than three inches as a matter of design choice based on the availability of the drivers or mounting space available in the loudspeaker system.

Regarding claim 15, it is said to be well known in the art that loudspeakers are commonly used to output a wide range of audio signal content including vocalist musical performers. The reference is said to further disclose a sound delivery system to be used as a public address system in numerous places and situations and/or playing background music or the like which could include vocalist musical performer and presenting entity (col. 1, lines 9-12).

Regarding claim 16, the reference is said to further disclose a sound delivery system to be used as a public address system in numerous places and situations and/or playing background music or the like which include a plurality of performers (col. 1, lines 9-12), loudspeaker system comprising a plurality of line arrays (FIG.1: 10, 12, 14 and 16), line arrays having a plurality of acoustic drivers (FIG. 2), plurality of drivers positioned in enclosure in a straight line regularly spaced less than one inch apart (col. 5, lines 37-39), each line array being constructed and arranged to be placed in the vicinity of one of the plurality of performers (col. 1, lines 53-55). The reference does not disclose the drivers having a diameter less than three inches.

It is said it would have been obvious to one of ordinary skill in the art at the time the invention was made to use drivers of less than three inches as a matter of design choice based on the availability of the drivers or mounting space available of the loudspeaker system.

Regarding claim 17, as stated with respect to claim 14, the reference as modified makes obvious all elements of that claim. The reference is said to further disclose a live source as an announcer (col. 1, lines 53-57). It is also said to be well known in the art that loudspeakers are commonly used to output a wide range of audio signal content including orators.

Regarding claim 18, the reference is said to further disclose an announcer walks back and forth in front of his or her audience at time approaching any one of the arrays (col. 3, lines 19-23).

These grounds of rejection are respectfully traversed.

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

As the Federal Circuit Court of Appeals said in *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999):

> Close adherence to this methodology is especially important of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.'

And in *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000), the Court said:

> [I]dentification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *See id.* [*Dembiczak*]. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. *See In re Dance*, 160 F.3d 1339, 1343, 48 U.S.P.Q.2d 1635, 1637 (Fed. Cir. 1998), *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. *See B. F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582, 37 U.S.P.Q.2d 1314, 1318 (Fed. Cir. 1996).

Nothing in the reference remotely suggests the desirability of the limitation in the claims that the drivers have a diameter less than three inches. The contention that "to use drivers of less than three inches is a matter of design choice" is a conclusion, not a reason for rejecting claims under § 103. In *In re Garrett*, 33 PTCJ 43 (BPA&I, September 30, 1986) the Board criticized the Examiner's statement that the proposed modification would have been "an obvious matter of engineering design choice" as a conclusion, not a reason, in reversing the section 103 rejection.

An important advantage of this limitation is that good vertical directivity is improved with diaphragm diameter that is less than three inches. Yet smaller diaphragm diameter is normally thought to make it more difficult to achieve good radiation response at lower frequencies. The structure defined by claim 2 provides this advantageous result of good vertical directivity and radiation over a substantial frequency range of at least six octaves not remotely suggested by the reference. Since all the claims rejected on the reference under § 103 include

these limitations, withdrawal of the rejection of claims 2-9, 11-18, 21 and 22 as unpatentable over the reference is respectfully requested. If this ground of rejection is repeated, the Examiner is respectfully requested to quote verbatim the language in the reference regarded as suggesting the desirability of modifying the reference disclosure to include the limitations acknowledged by the Examiner as absent from the reference.

5. Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ferren as a primary reference as applied to claim 2 in view of Macey as a secondary reference. The primary reference is said to disclose a loudspeaker system as stated apropos of claim 2 including power amplifiers (FIG. 6; amplifier 62L, 64L, 62R, and 63R). The primary reference is said to not disclose transducing at least seven watts of electrical energy per square inch of radiating surface. It is said to be well known in the art that amplifiers used to power acoustic drivers can have a wide range of power output to provide audio signals to audio transducers. The output power is said to be often chosen based on the need for a certain amount of acoustical output from the loudspeaker. The secondary reference is said to disclose an audio amplifier providing 100-300 watts per channel. Therefore it is said it would have been obvious to one of ordinary skill in the art at the time the invention was made to output acoustical energy of at least seven watts per square inch of radiating surface in order to provide enough audio output as desired.

This ground of rejection is respectfully traversed.

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

"Although the Commissioner suggests that [the structure in the primary prior art reference] could readily be modified to form the [claimed] structure, '[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.'" *In re Laskowski*, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989).

"The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so." *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (emphasis in original, footnotes omitted).

"The critical inquiry is whether 'there is something in the prior art as a whole *to suggest* the desirability, and thus the obviousness, of making the combination. [citing *Lindemann* with emphasis added.]'" *Fromson v. Advance Offset Plate, Inc.*, 225 U.S.P.Q. 26, 31 (Fed. Cir. 1985).

The reasoning set forth above in support of the patentability of parent claim 2 is submitted to support the patentability of claim 10 so that further discussion of the references is submitted to be unnecessary.

Furthermore, because of the recognized absence of elements in the primary reference from the structure claimed in claim 10, it is impossible to combine the references t o meet the terms of claim 10. "Moreover, we observe that even if these references were combined in the manner proposed by the examiner, that which is set forth in appellant's claims . . . would not result." *Ex parte Bogar*, slip op. p.7 (BPA&I Appeal No. 87-2462, October 27, 1989). "Even if we were to agree with the examiner that it would have been obvious to combine the reference teachings in the manner proposed, the resulting package still would not comprise zipper closure material that terminates short of the end of the one edge of the product containing area, as now claimed." *Ex parte Schwarz*, slip op. p.5 (BPA&I Appeal No. 92-2629 October 28, 1992). "Although we find nothing before us indicating why it would be desired to combine the references in the manner urged by the examiner, it is clear to us that such a modification by itself would not result in that which is set forth in the claims." *Ex Parte Kusko*, 215 U.S.P.Q. 972, 974 (BPA&I 1981).

That it is impossible to combine the primary and secondary references to meet the terms of claim 10 is reason enough for withdrawing the rejection of this claim.

Accordingly, withdrawal of the rejection of claim 10 as unpatentable over the primary and secondary references is respectfully requested. Should this ground of rejection be repeated, the Examiner is respectfully requested to quote verbatim the language in each reference regarded as corresponding to a limitation in claim 10 and quote verbatim the language in the references

regarded as suggesting the desirability of combining what is there disclosed to meet the terms of claim 10.

In view of the foregoing authorities, remarks, and the inability of the prior art to anticipate, suggest or make obvious the subject matter as a whole of the invention disclosed and claimed in this application, all the claims are submitted to be in a condition for allowance and notice thereof is respectfully requested. Should the Examiner believe the application is not in a condition for allowance, he is respectfully requested to telephone the undersigned attorney at 617-521-7014 to discuss what additional steps he believes are necessary to place the application in a condition for allowance.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,
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Date: 19 August 2004

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